[Document Type] Abstract

[Abstract]

[Object]

It is one object of the present invention to provide a method and system for embedding an electronic watermark directly in an MPEG stream.

[Constitution]

An intra-macroblock of an I-frame or of a P or B-frame is detected in an MPEG stream, and following the detection of an intra-macroblock of the I-frame or of the P or B-frame, data for one macroblock are extracted from the MPEG stream and buffered. An embedding pattern is embedded in the buffered macroblock without changing the length of VLC, and the resultant macroblock is returned to the MPEG stream. More specifically, a DC factor is extracted from the buffered macroblock, and a pseudorandom number is generated to produce an embedding pattern. Then, whether the bit length of the DC factor will not be changed by embedding the obtained embedded pattern is determined. When the bit length of the DC factor not be changed, the embedding pattern is embedded in the buffered macroblock. When the bit length will be changed, whether 1/2 of the embedding pattern can be embedded is determined. If possible, 1/2 of the embedded pattern is embedded in the macroblock.

[Selected Drawing] Fig. 4